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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,884

10/20/2005

Brian Lane

1781-0015

8850

28078 7590 12/10/2008

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CHASE TOWER

111 MONUMENT CIRCLE

SUITE 3250

INDIANAPOLIS, IN 46204

EXAMINER

ORLANDO, AMBER ROSE

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

12/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/521,884
Filing Date: October 20, 2005
Appellant(s): LANE ET AL.

Paul J. Maginot
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 22nd 2008 appealing from the Office action mailed February 20th 2008.

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(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Guenter DE 10019293 A1 (October 31, 2001)

Billiet GB 2,126,497 (March 28, 1984)

Gieseke et al. US 6,143,049 (November 7, 2000)

Ross US 2,754,970 (July 17, 1956)

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English translation of the Guenter DE 10019293 A1

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guenter DE 10019293 A1 in view of Billiet GB 2,126,497 and Gieseke et al. US 6,143,049.

Regarding claim 1, the Guenter reference discloses a coalescing filter element for removing liquid droplets from a gas stream, which comprises a wall which is made of coalescing filtration material (figure 1, object 5b) and which defines a hollow space within it (figure 1, object 6), gas being supplied to the hollow space to flow through the filtration material of the wall (figure 1, object 5) and the tube extending beyond the peripheral opening(s) so as to deliver gas to a region of the element which is remote from the entry way (figure 1, object 6a). The Guenter reference does not disclose an end cap at one end of the element, which has a port though, which the said gas is supplied to the said hollow space, the end cap comprising a peripheral portion which engages the element wall, and at least one peripheral opening located between the tube and the peripheral portion of the end cap.

The Billiet reference discloses an end cap at one end of the element, which has a port though, which the said gas is supplied to the said hollow space, the end cap comprising a Peripheral portion which engages the element wall (page 3, lines 76-87).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Guenter reference to disclose an end cap at

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one end of the element, which has a port though, which the said gas is supplied to the said hollow space, the end cap comprising a peripheral portion which engages the element wall (Billiet, page 3, lines 76-87) because this would encapsulate the assembly, therefore a more stable structure.

The Gieseke et al. reference discloses at least one peripheral opening located between the tube and the peripheral portion of the end cap (figure 6, object 146).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Guenter reference to disclose at least one peripheral opening located between the tube and the peripheral portion of the end cap (Gieseke et al. figure 6, object 46) because this provides an air way for which the gas can flow through.

For claim 2, the Guenther reference does not disclose the tube, which defines the inner opening being supported by means of at least one vane, which extends between it and the peripheral portion of the end cap.

The Gieseke et al. reference discloses the tube, which defines the inner opening being supported by means of at least one vane, which extends between it and the peripheral portion of the end cap (figure 6, object 150).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Guenther reference to include the tube, which defines the inner opening being supported by means of at least one vane, which extends between it and the peripheral portion of the end cap (Gieseke et al. figure 6,

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object 150) because the vanes help to ensure that the element does not fall out of the housing during use.

For claim 3, the Guenther reference does not disclose at least three vanes extending between the tube and the peripheral portion of the end cap.

The Gieseke et al. reference discloses at least three vanes extending between the tube and the peripheral portion of the end cap (figure 6, object 150).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Guenther reference to include at least three vanes extending between the tube and the peripheral portion of the end cap (Gieseke et al. figure 6, object 150) because the vanes help to ensure that the element does not fall out of the housing during use.

For claim 5, the Guenther reference discloses the tube being located approximately centrally in the inlet port (figure 1, object 6a).

For claim 6, the Guenther reference does not explicitly state that the ratio of the length of the tube measured from the edge of the element wall where the end cap engages the wall to the overall length of the wall, is at least about 0.1. However is apparent that the ratio of the length of the tube measured from the edge of the element wall where the end cap engages the wall to the overall length of the wall is at least about 0.1, by viewing figure 1, objects 6a, and 5b.

For claim 7, the Guenther reference does not disclose the ratio of the area of the inner opening in the port to the total area of the peripheral opening (or openings) is not more than about 0.6.

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The Gieseke et al. reference discloses the ratio of the area of the inner opening in the port to the total area of the peripheral opening (or openings) is not more than about 0.6 (figure 6, objects 147, and 133).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Guenther reference to include the ratio of the area of the inner opening in the port to the total area of the peripheral opening (or openings) is not more than about 0.6. (Figure 6, objects 147, and 133) because this allows air to flow more freely through out the hollow space.

For claim 8, the Guenther reference does not disclose the ratio of the area of the inner opening in the port to the total area of the peripheral opening (or openings) is not more than about 0.25.

The Gieseke et al. reference discloses the ratio of the area of the inner opening in the port to the total area of the peripheral opening (or openings) is not more than about 0.25 (figure 6, objects 147, and 133).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Guenther reference to include the ratio of the area of the inner opening in the port to the total area of the peripheral opening (or openings) is not more than about 0.25. (Figure 6, objects 147, and 133) because this allows air to flow more freely through out the hollow space.

Claim 4 is rejected as being unpatentable over Guenter DE 10019293 A1 in view of Billiet GB 2,126,497 and Gieseke et al. US 6,143,049 as applied to claim 2 above, and further in view of Ross US 2,754,970.

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Regarding claim 4, the Guenther reference does not disclose vanes being arranged so that they impart a helical flow to gas flowing through the peripheral openings, relative to the axis defined by the port.

The Ross reference discloses vanes being arranged so that they impart a helical flow to gas flowing through the peripheral openings, relative to the axis defined by the port (figure 1, object 19).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Guenther reference to include vanes being arranged so that they impart a helical flow to gas flowing through the peripheral openings, relative to the axis defined by the port (Ross, figure 1, object 19) because the centripetal force created by the helical vanes causes the contaminants within the stream to become unstable and to be forced to the edge of the stream, along the wall, increasing the efficiency of the separator.

Claim 9 is rejected as being unpatentable over Guenter DE 10019293 A1 in view of Billiet GB 2,126,497 and Gieseke et al. US 6,143,049 as applied to claim 1 above, and further in view of Ross US 2,754,970.

Regarding claim 9, the Guenther reference does not disclose the tube containing at least one vane within it for imparting a helical flow to gas flowing through the tube, relative to the axis of the tube.

The Ross reference discloses the tube containing at least one vane within it for imparting a helical flow to gas flowing through the tube, relative to the axis of the tube (figure 1, object 7).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Guenther reference to include the tube containing at least one vane within it for imparting a helical flow to gas flowing through the tube, relative to the axis of the tube (Ross, figure 1, object 7) because the centripetal force created by the helical vanes causes the contaminants within the stream to become unstable and to be forced to the edge of the stream, along the wall, increasing the efficiency of the separator.

(10) Response to Argument

For claim 1, the examiner is taking Guenter's apparatus and modifying the end cap (Guenter figure 1, object 1) to include the peripheral openings bordering the edges of the end cap of Billiet (Billiet figure 7, object 63). This would result in the inlet of the Guenter's reference (figure 1 objects 2 and 6) "floating" in the middle of the inlet of the Billiet reference and therefore would need support. The Gieseke reference is used for the vanes (Gieseke figure 6, object 150) to show that such vanes can be used to secure a tube within a tube and also that flow within filters is often between two tube-like structures. Therefore when taken collectively, the Guenter, Billiet and Gieseke references result in the appellants' invention.

For claim 1, the appellant contends that "None of the cited art discloses an end cap for generally cylindrical filter element which provides dual channel access (e.g., a central tube with an opening and peripheral opening around the tube), much less dual channel access configured to spread the filtration load of contaminated gas flow throughout the length of the filtration material wall."

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The examiner agrees with this statement, none of the cited documents individually discloses an apparatus with dual channel access. The cited documents do disclose a dual channel access when taken collectively. Modifying the end cap of the Guenter reference with the peripheral opening around the tube of the Billiet reference would provide dual channel access. Providing support for this inner tube of the Guenter reference within the outer tube of the Billiet reference so the tube is not "floating" in the middle would be obvious to a skilled artisan.

The appellant contends that Guenter's end cap does not include peripheral openings to assist in the delivery of gas to the hollow space in the filter element.

The examiner agrees. The Billiet reference discloses an opening that abuts the inside of the end cap (figure 7 object 63) and therefore when combined with the Guenter reference (figure 1 object 6) would result in a peripheral opening.

The appellant contends that for the Gieseke reference, "the structure 104 is not even part of the coalescer filter but rather is a part of the polishing filter".

The examiner agrees. The filter of the Gieseke reference is used to filter air, as is the coalescing filter of the appellant's invention, and therefore is analogous art.

The appellant contends that "Redesigning the end cap 63 (of the Billiet reference) to include peripheral openings in addition to a tube opening would be unnecessary, and would make the end cap design more complex."

The examiner disagrees. The examiner is redesigning the end cap of the Guenter reference (figure 1 object 1) to include the larger opening of the Billiet reference so that the incoming unfiltered air can be provided to the entire filtering

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surface of the second outside filter of Guenter (figure 1 object 5b) as it does in the Billiet reference (figure 7 objects 61 and 60).

The appellant argues that "modifying the end cap to include peripheral openings in addition to a tube opening would be inconsistent with the teachings of Guenter. Significantly, Guenter wants the flow of gas to be advanced through a prefilter 6."

The examiner disagrees. If the Guenter reference were modified to include the inlet of the Billiet reference as discussed above, the longevity of the main filter (Guenter figure 1 object 5) would still be increased, which was the object of the Guenter reference. The object of the Guenter reference is to provide an inner tube (figure 1 object 6a) which would convert the intake flow "to a rotating flow, causing the gaseous medium, on its way through the hollow cylindrical filter medium 6a, to be separated from the solid matter particles as well as the liquid matter particles" therefore allowing the longevity of the main filter to be increased (translation of the Guenter reference, pages 5 and 6 paragraph [0012]). Therefore, if the peripheral openings were to be included in the Guenter reference, the air would still be flowing through the central tube (figure 1 object 6a), and the longevity of the outside filter would still be increased therefore maintaining the overall object of the Guenter reference.

The appellant argues that the tube of Gieseke reference "does not extend into the hollow space within the wall that is made of filtration material" and "Gieseke's passageways 146 are defined between the inner wall 133 of the housing 80 and the tube 145 which is located externally to the coalescing filter element 170. Thus, at best

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Gieseke teaches providing openings between a housing wall and a tube positioned outside of a filter element that defines a hollow space therein.

The examiner agrees that the Gieseke reference does not include the tube described above. As discussed in the opening paragraph of the Response to Arguments, the Guenter reference discloses the tube (Guenter, figure 1 object 6a) extending beyond the peripheral opening of the Billiet reference (Billiet figure 7 object 63) so as to deliver gas to a region of the element which is remote from the entry way (Guenter, figure 1 object 6a and 5b). The Gieseke reference is used for the vanes (Gieseke figure 6, object 150) to show that such vanes can be used to secure a tube within a tube and also that flow within filters is often between two tube-like structures. Therefore when taken collectively, the Guenter, Billiet and Gieseke references result in the appellants invention.

The appellant argues that the Billiet reference “does not disclose at least one peripheral opening defined in an end cap that is located between a tube which is positioned internally to a coalescing filter element and a peripheral portion of the end cap which is attached to a wall of a coalescing element”.

The examiner agrees that the Billiet reference does not disclose the peripheral opening defined in an end cap between the wall of a coalescing element and a tube which is positioned internally to the coalescing filter element. The examiner takes the position that when the Guenter and Billiet references are taken collectively, modifying the end cap of the Guenter reference (Guenter figure 1, object 1) to include the peripheral openings bordering the edges of the end cap of Billiet reference (Billiet figure

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7, object 63) would result in the peripheral openings of the appellants' invention. The examiner disagrees that the Billiet reference does not include "a peripheral portion of the end cap which is attached to a wall of a coalescing element". The Billiet reference discloses the end cap (Billiet, figure 7 object 63) being attached to the filtering element (figure 7 objects 61 and 60).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Amber Orlando/

Conferees:

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1797

/Jennifer Michener/

QAS, TC1700